

PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID: QMNRH-17

NOKIA

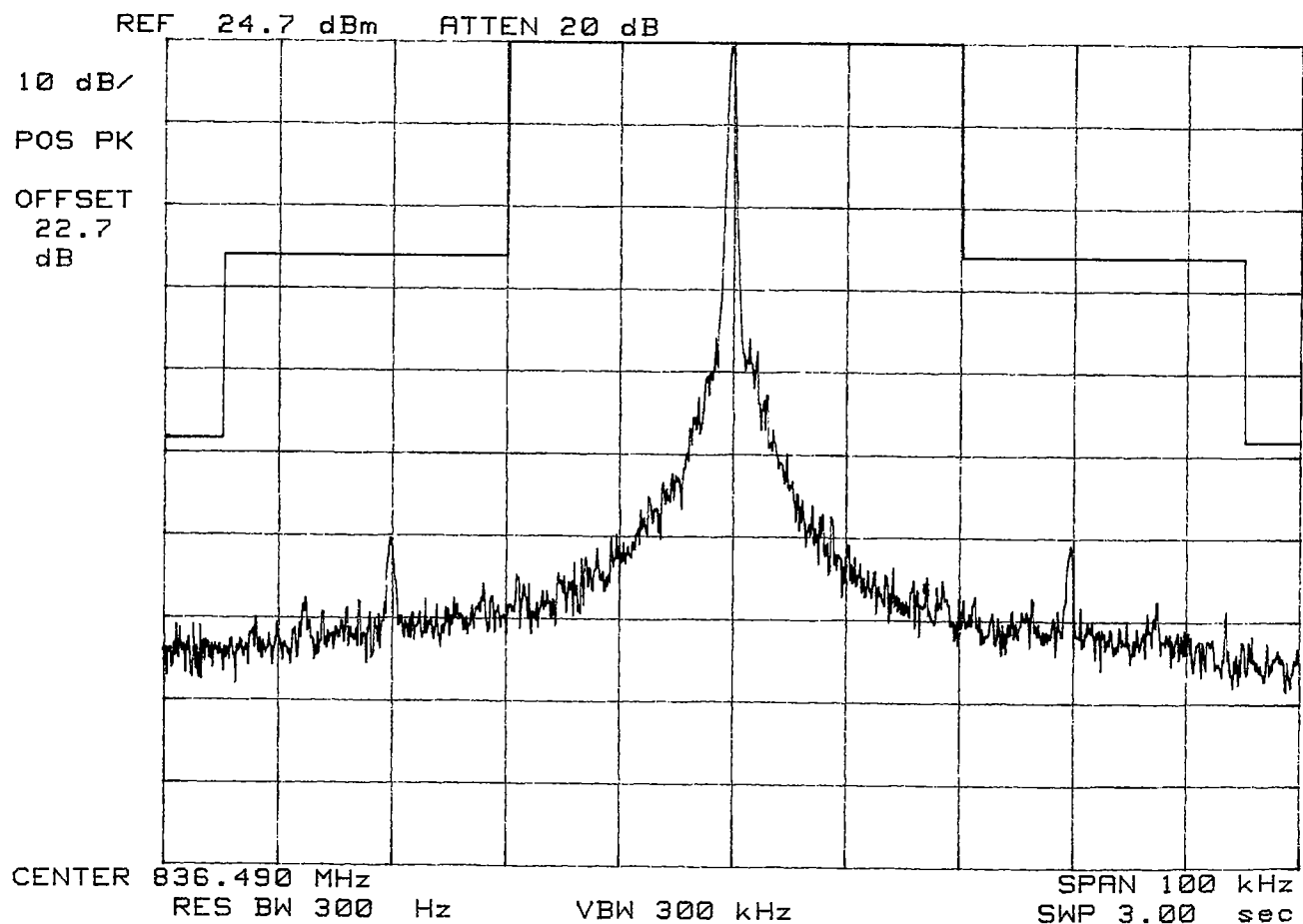
Dual-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 24.7 dBm

Test Mode: Unmodulated Signal



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID: QMNRH-17

NOKIA

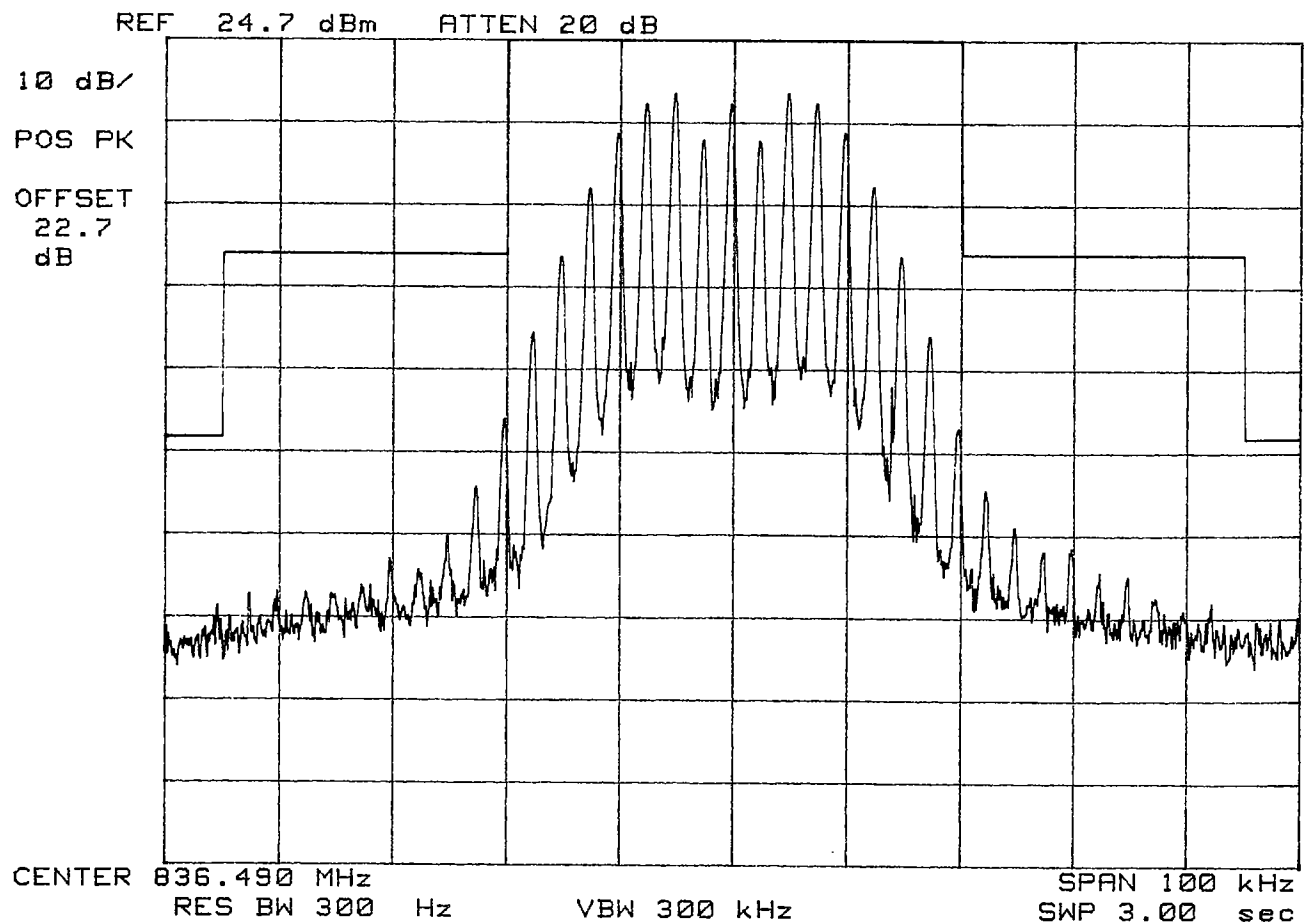
Dual-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 24.7 dBm

Test Mode: Voice



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID: QMNRH-17

NOKIA

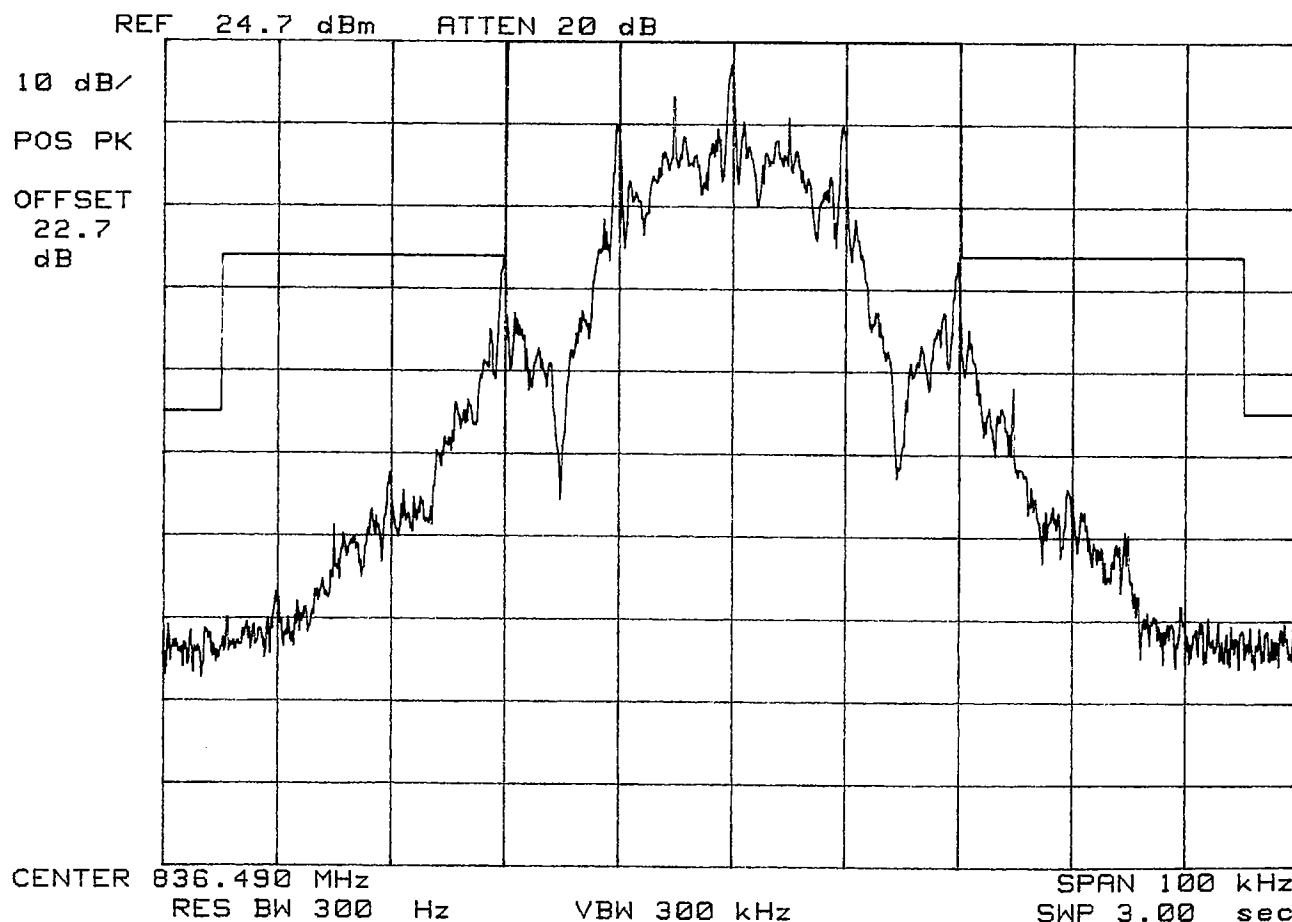
Dual-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 24.7 dBm

Test Mode: Wide Band Data



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID: QMNRH-17

NOKIA

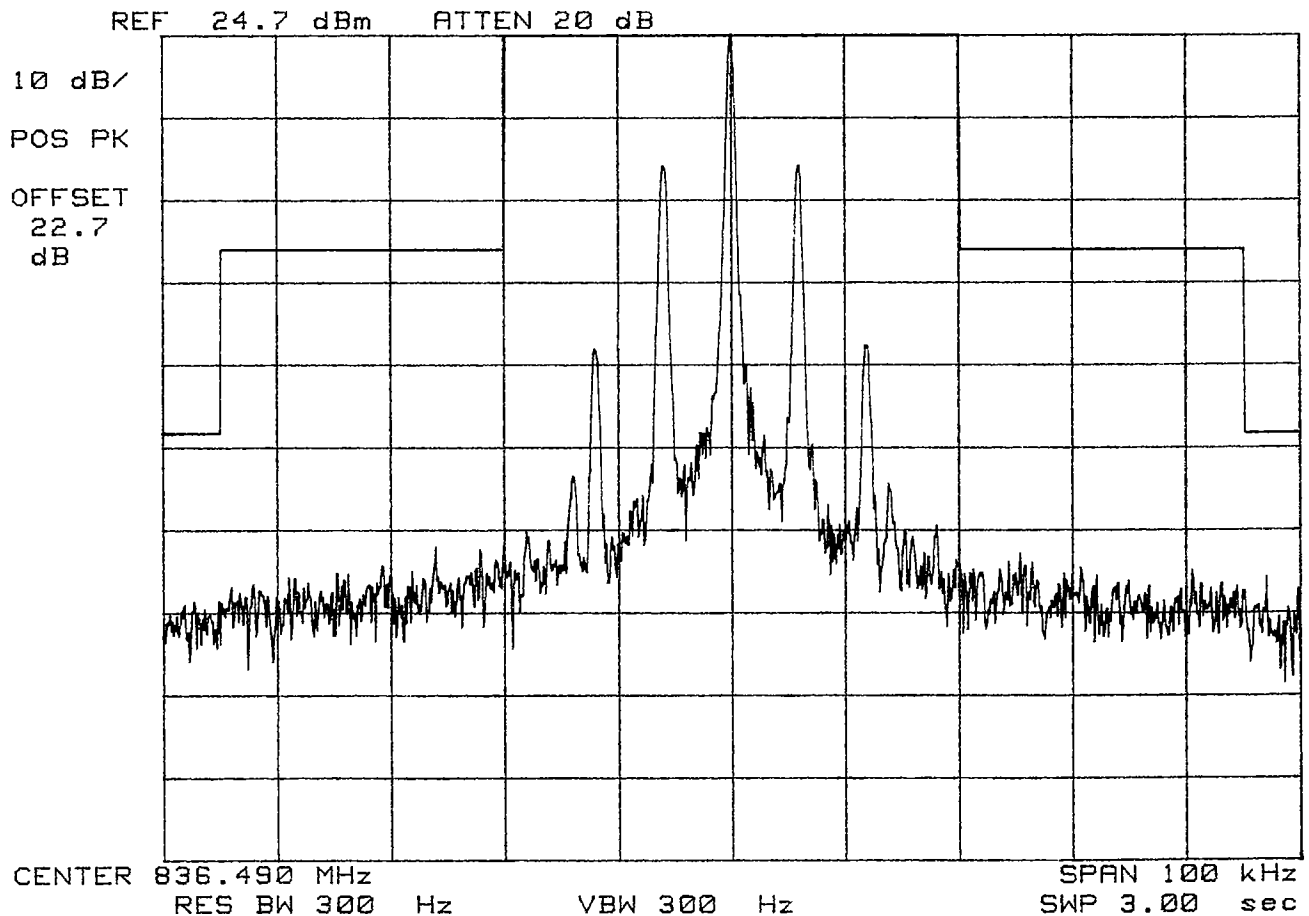
Dual-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 24.7 dBm

Test Mode: SAT



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID: QMNRH-17

NOKIA

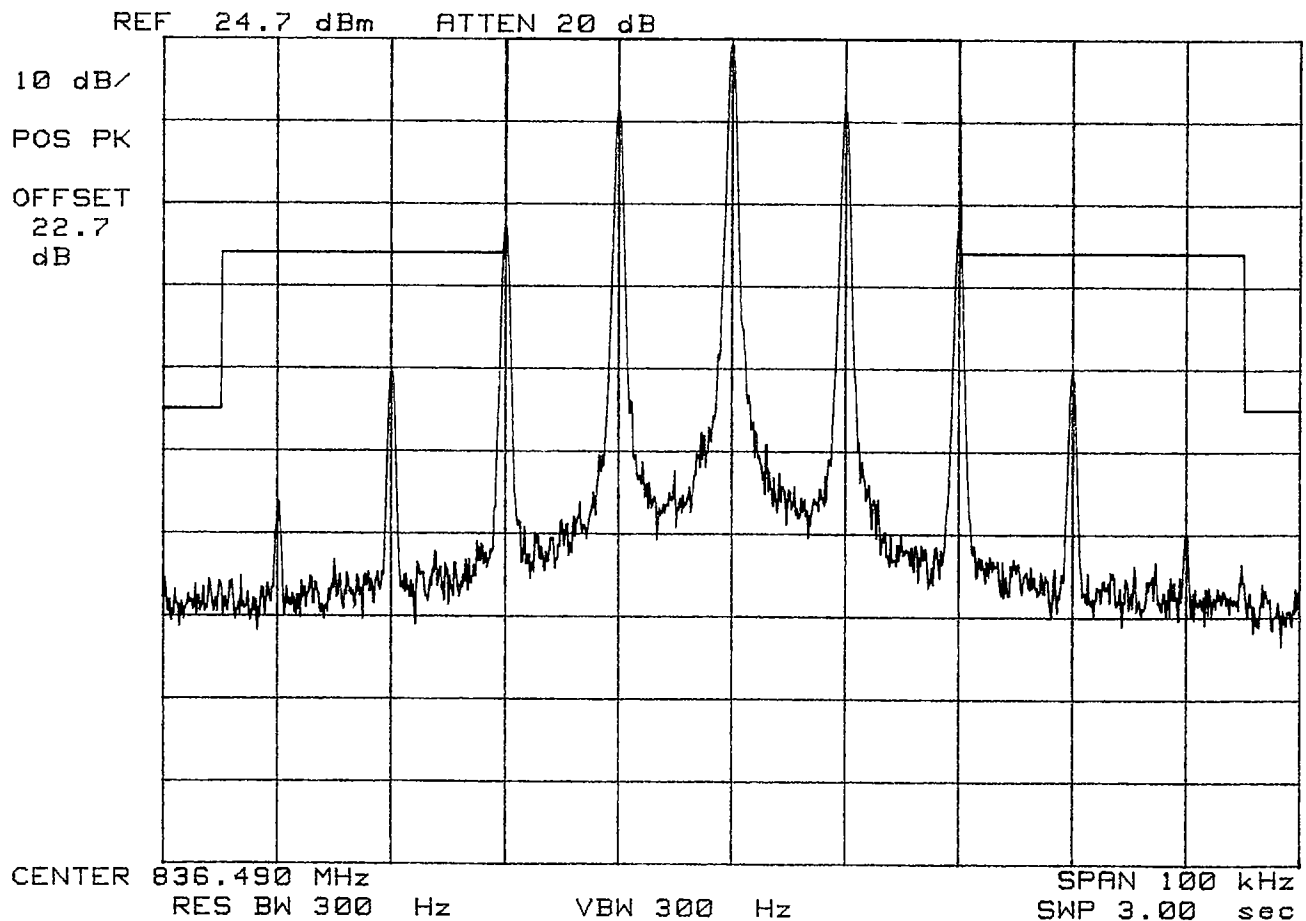
Dual-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 24.7 dBm

Test Mode: ST



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID: QMNRH-17

NOKIA

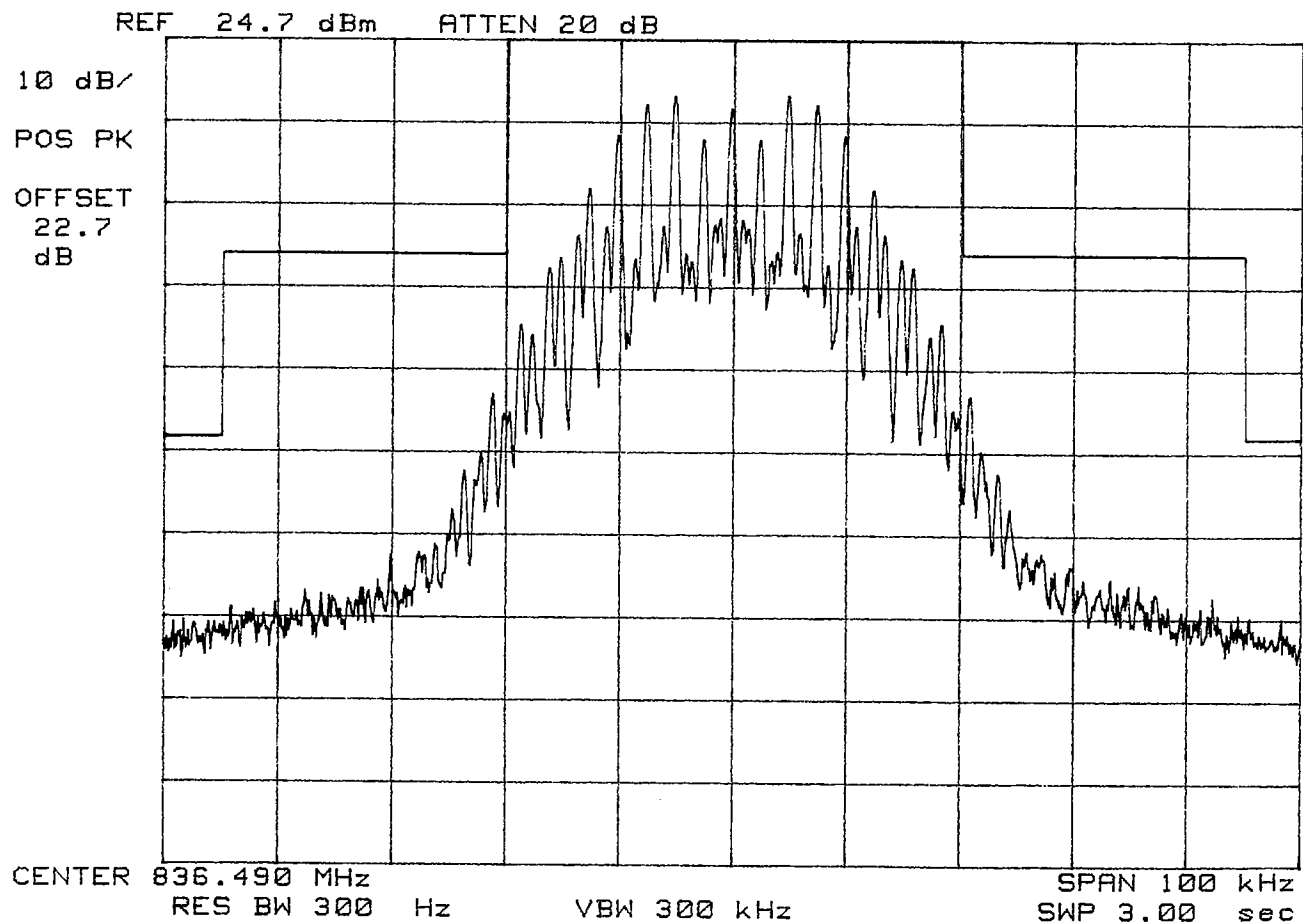
Dual-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 24.7 dBm

Test Mode: SAT + Voice



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID: QMNRH-17

NOKIA

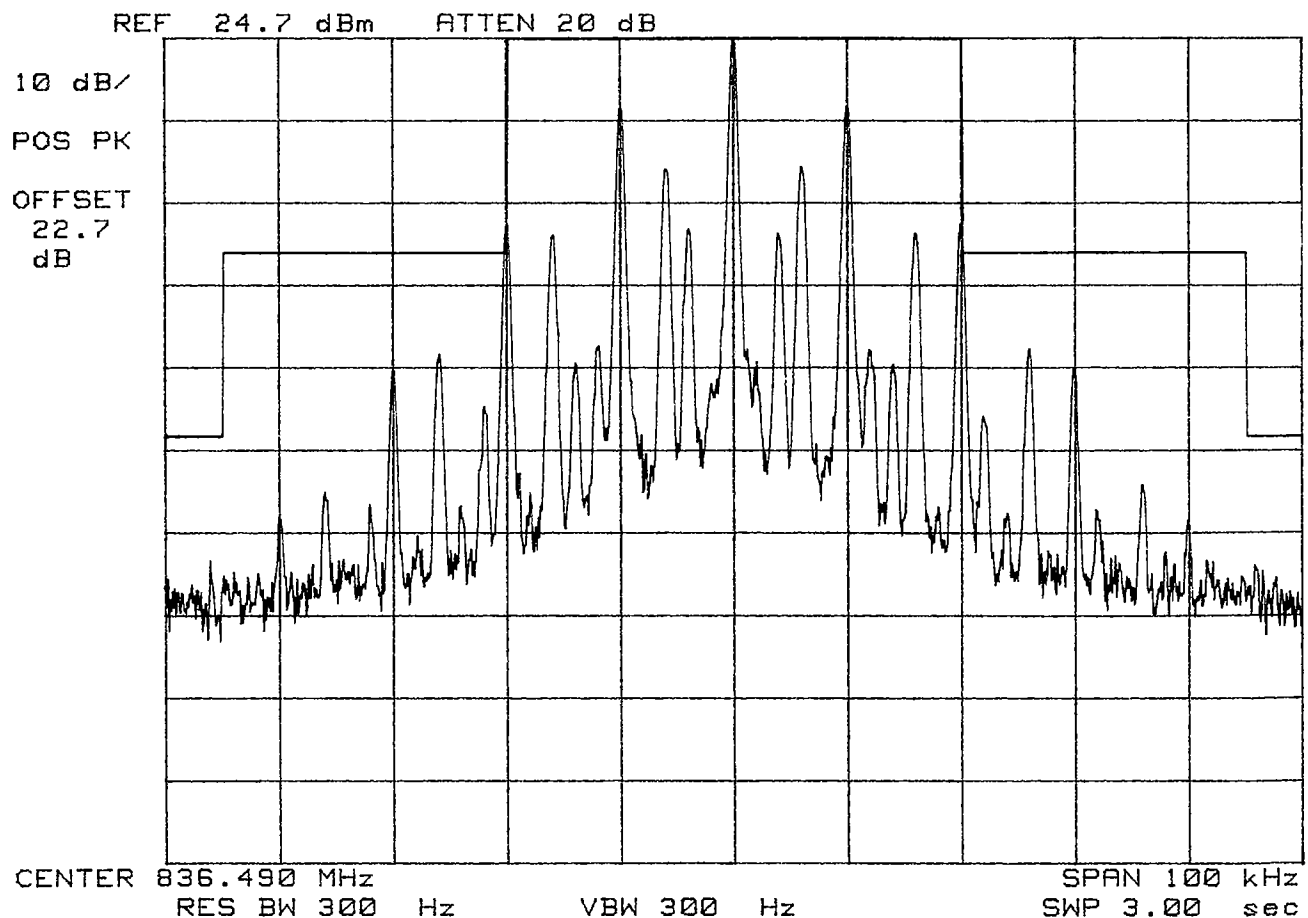
Dual-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 24.7 dBm

Test Mode: SAT + ST



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID: QMNRH-17

NOKIA

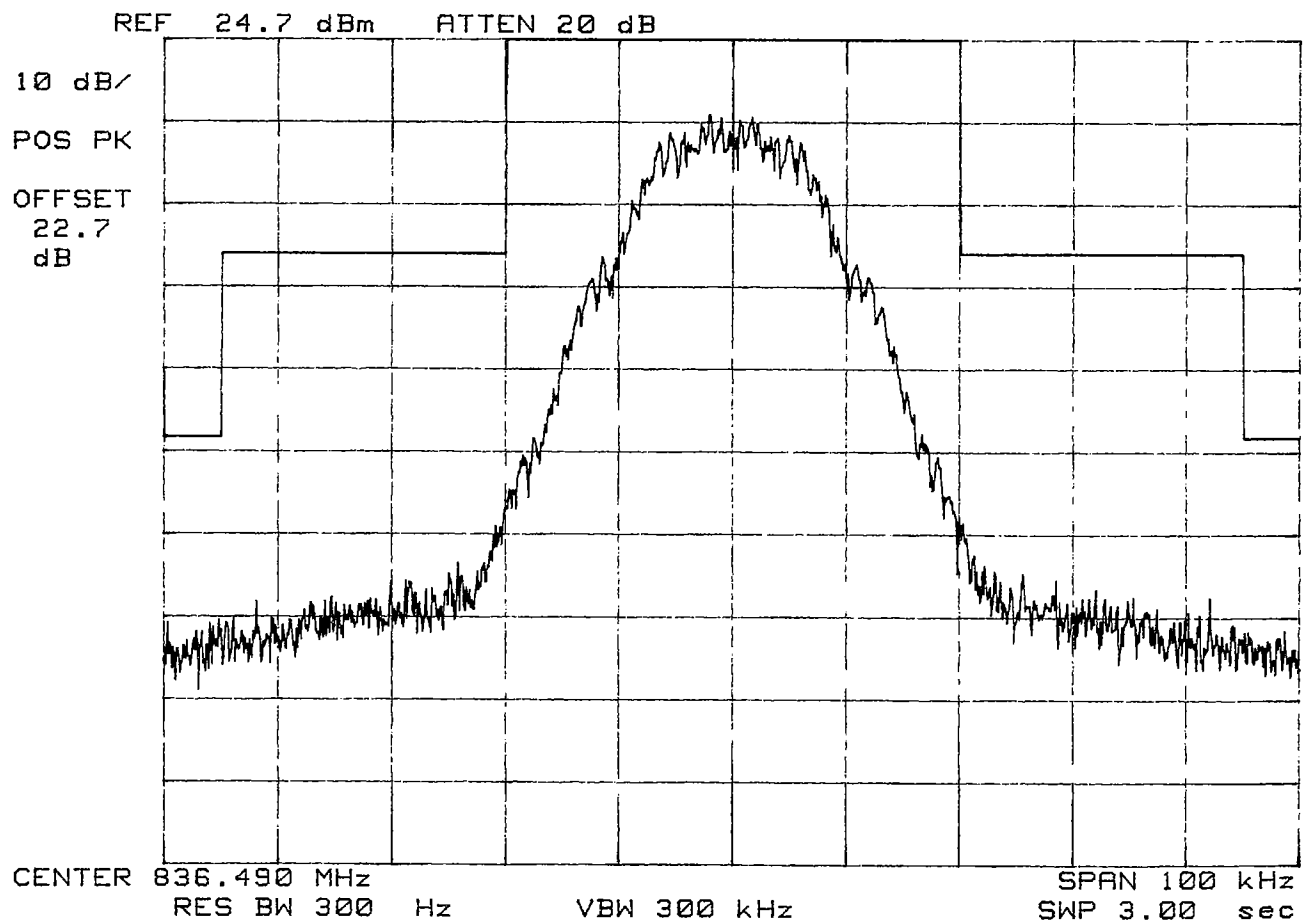
Dual-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 24.7 dBm

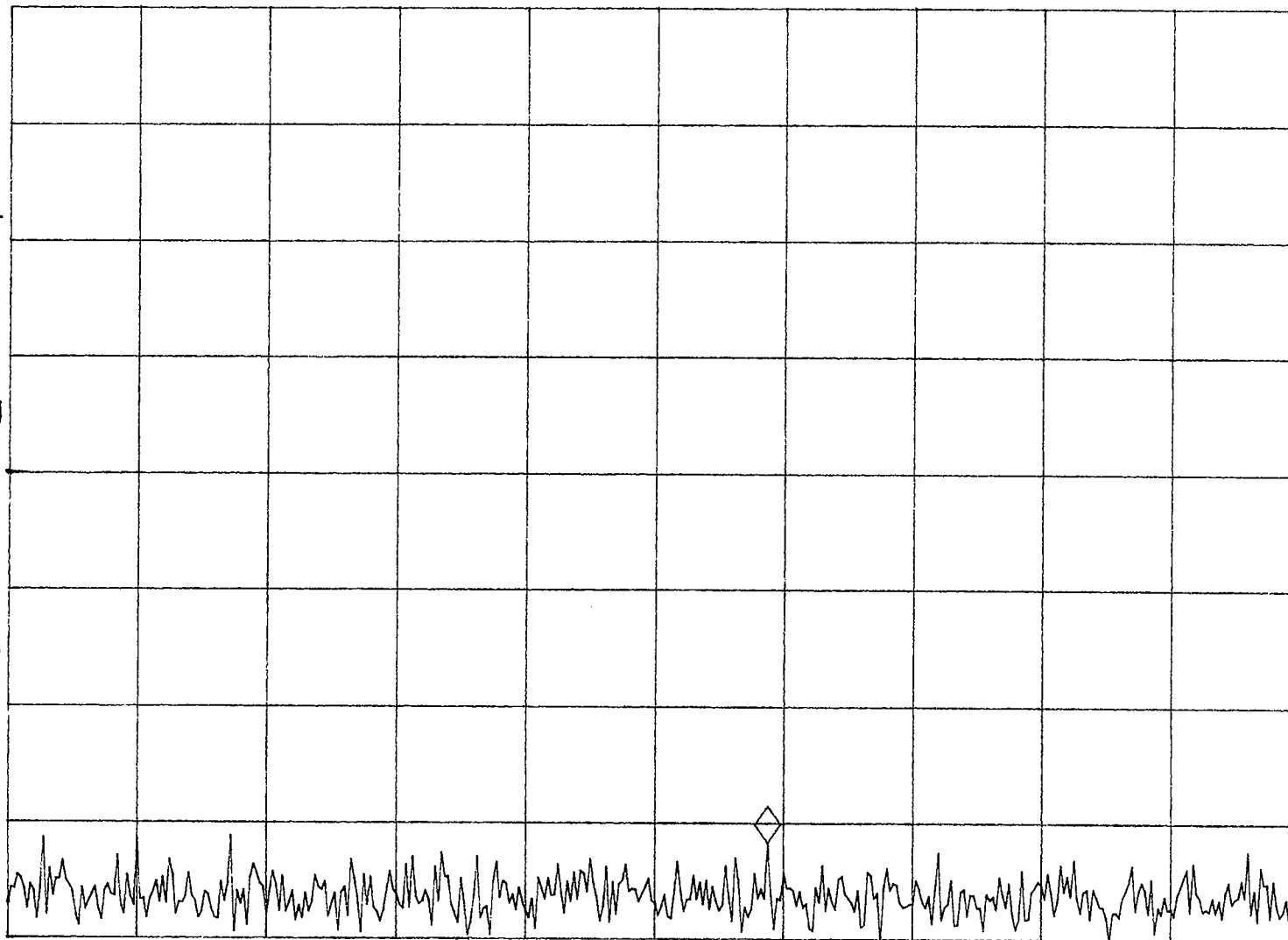
Test Mode: SAT + DTMF



~~HP~~ FCC ID: QMNRH-17 FM MODE MKR 883.69 MHz
REF -60.0 dBm ATTEN 10 dB PG 25.0 dB -95.84 dBm

PEAK
LOG
5
dB/
OFFST
6.0
dB
DL
-80.0
dBm

VA SB
SC FC
CORR

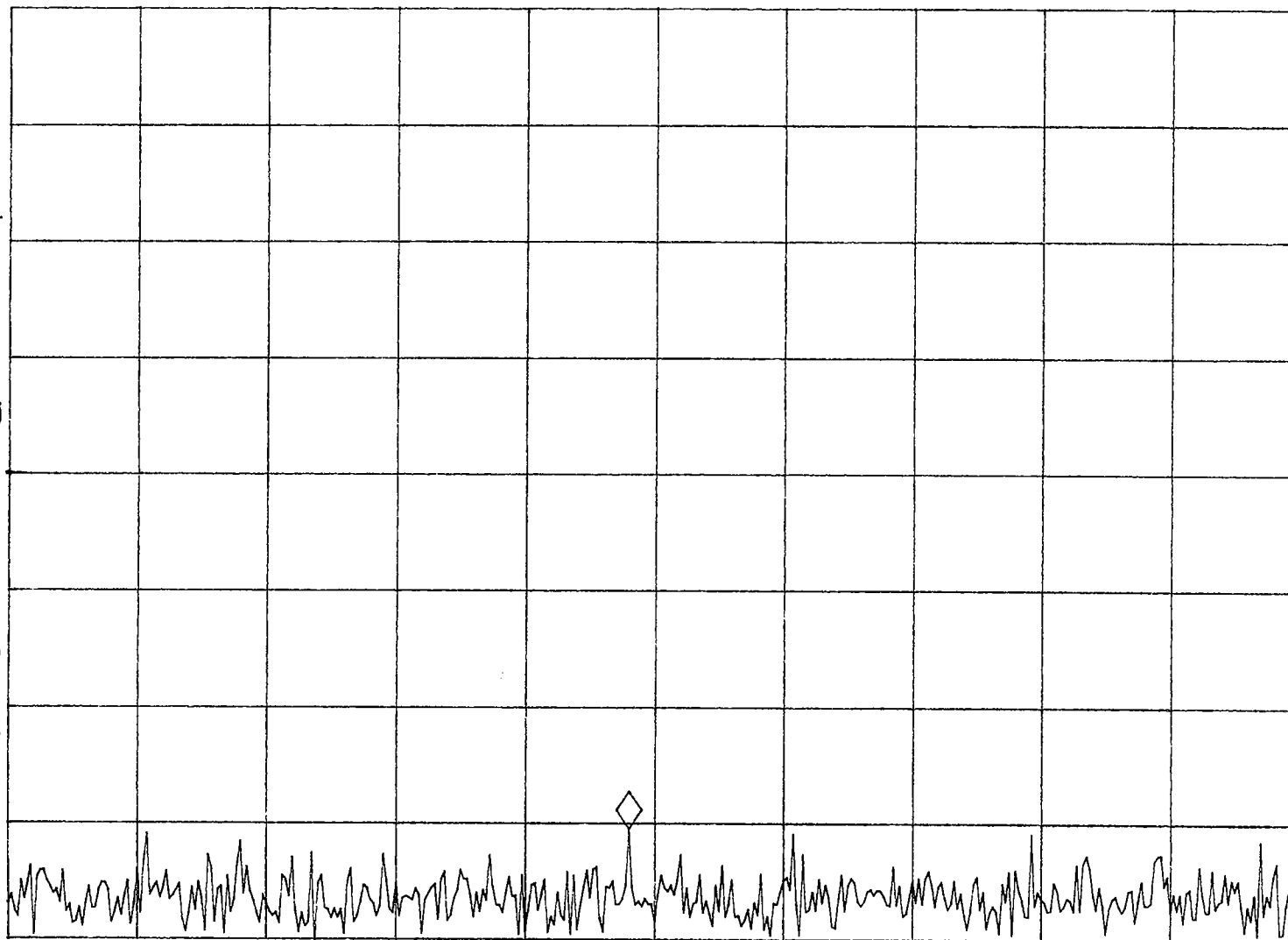


START 869.00 MHz STOP 894.00 MHz
#RES BW 100 kHz #VBW 300 kHz SWP 20 msec

hp FCC ID: QMNRH-17 CDMA MODE MKR 881.00 MHz
REF -60.0 dBm ATTEN 10 dB PG 25.0 dB -95.21 dBm

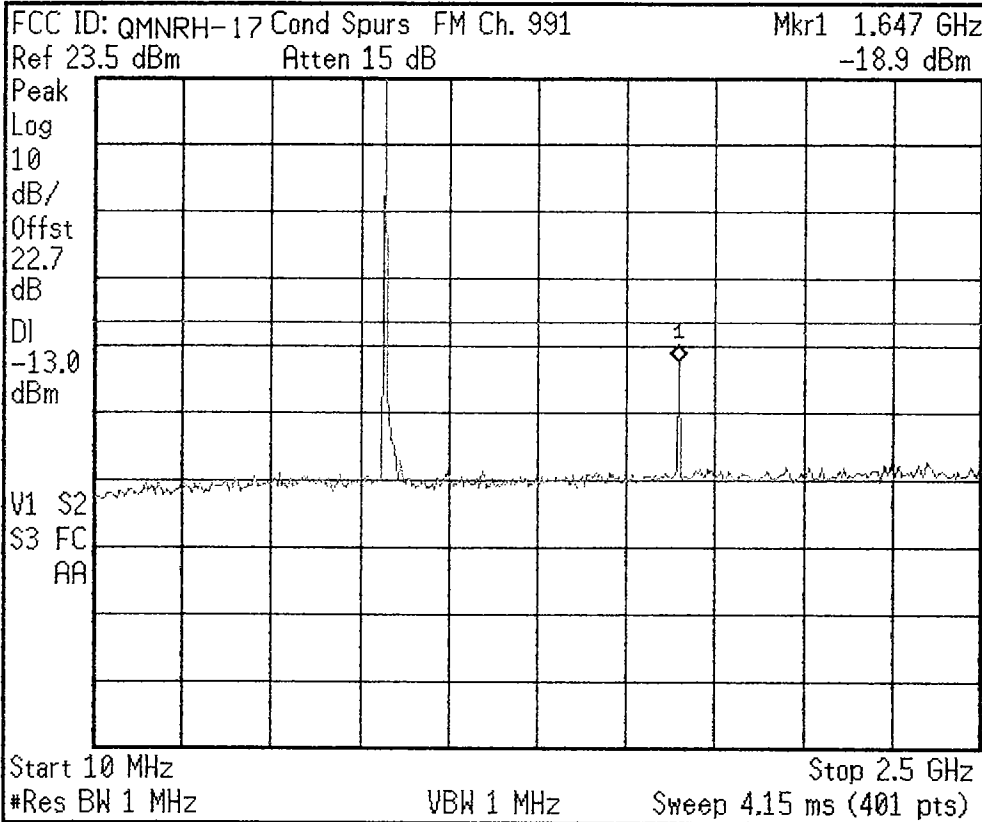
PEAK
LOG
5
dB/
OFFST
6.0
dB
DL
-80.0
dBm

VA SB
SC FC
CORR



START 869.00 MHz STOP 894.00 MHz
#RES BW 100 kHz #VBW 300 kHz SWP 20 msec

Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

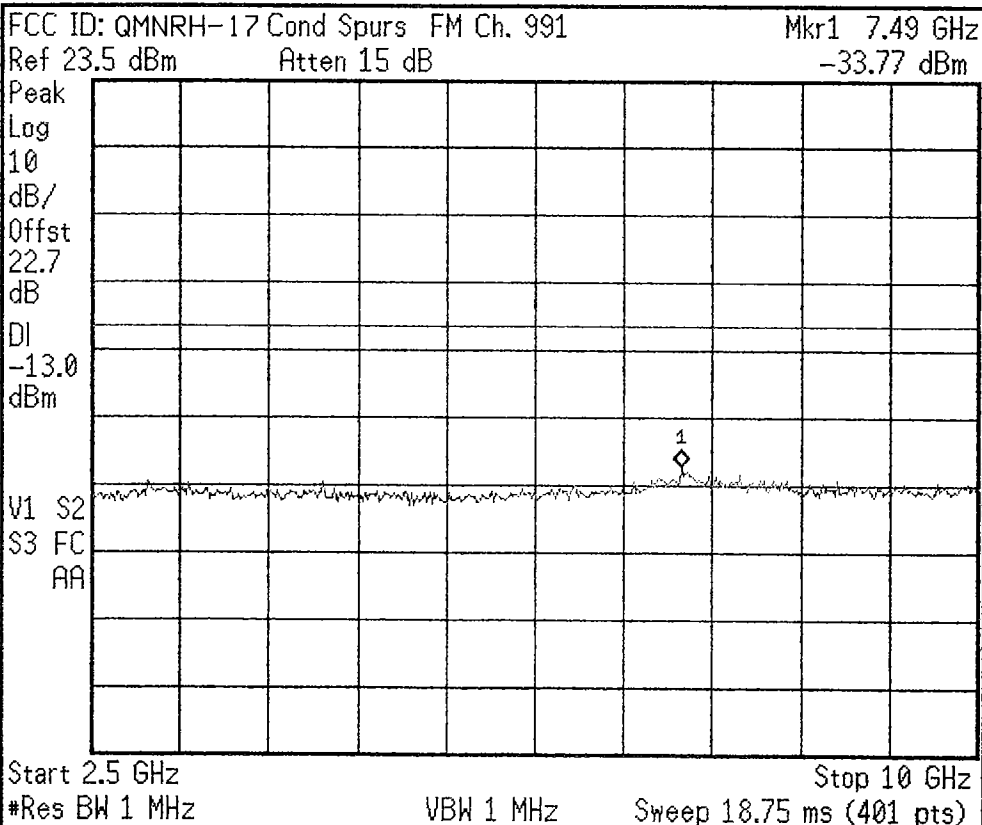
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

Agilent



Freq/Channel

Center Freq
 6.25000000 GHz

Start Freq
 2.50000000 GHz

Stop Freq
 10.0000000 GHz

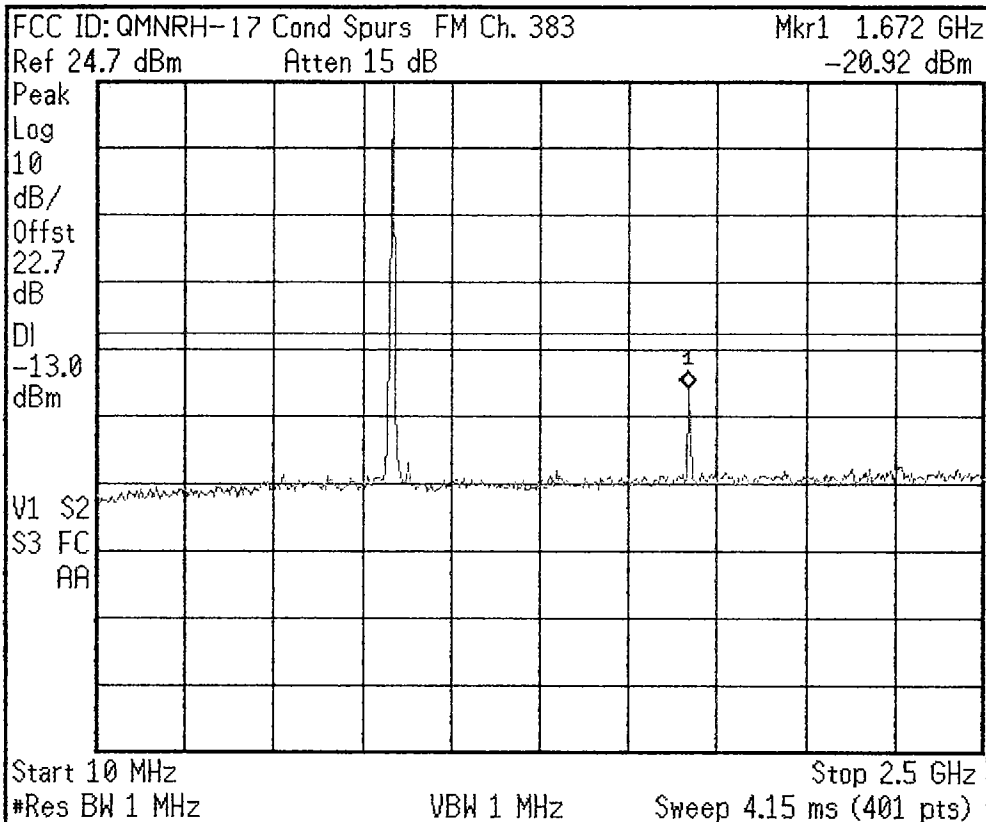
CF Step
 750.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

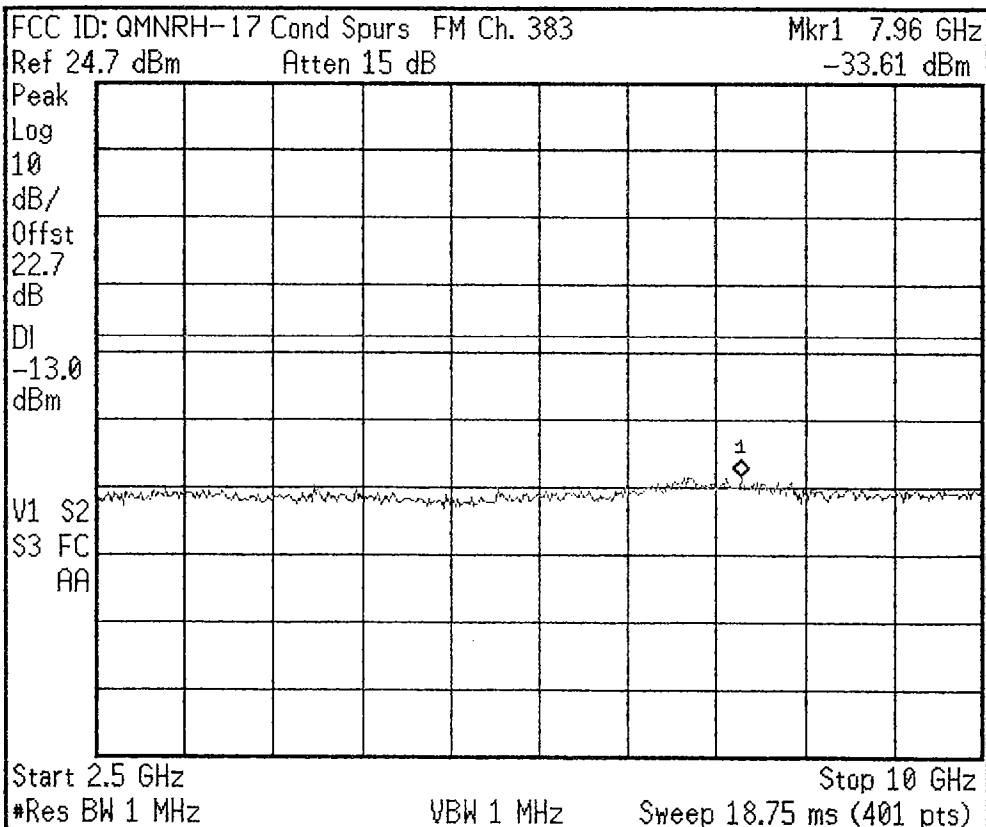
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

Agilent



Freq/Channel

Center Freq
 6.25000000 GHz

Start Freq
 2.50000000 GHz

Stop Freq
 10.0000000 GHz

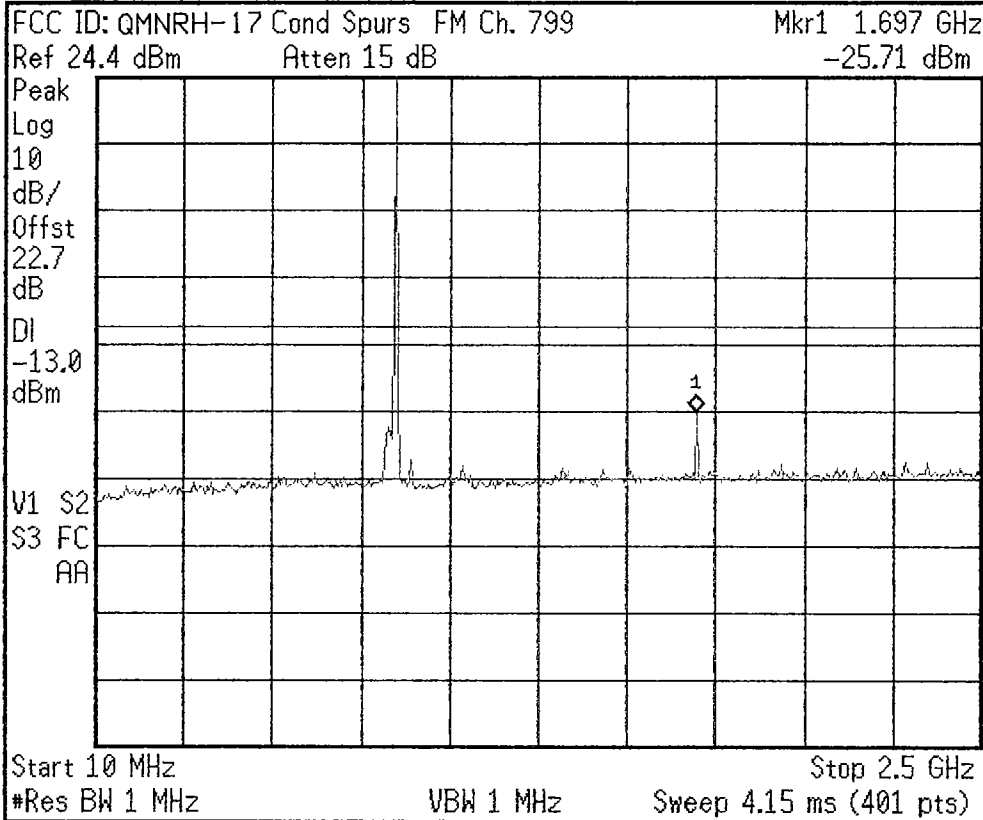
CF Step
 750.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

✱ Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

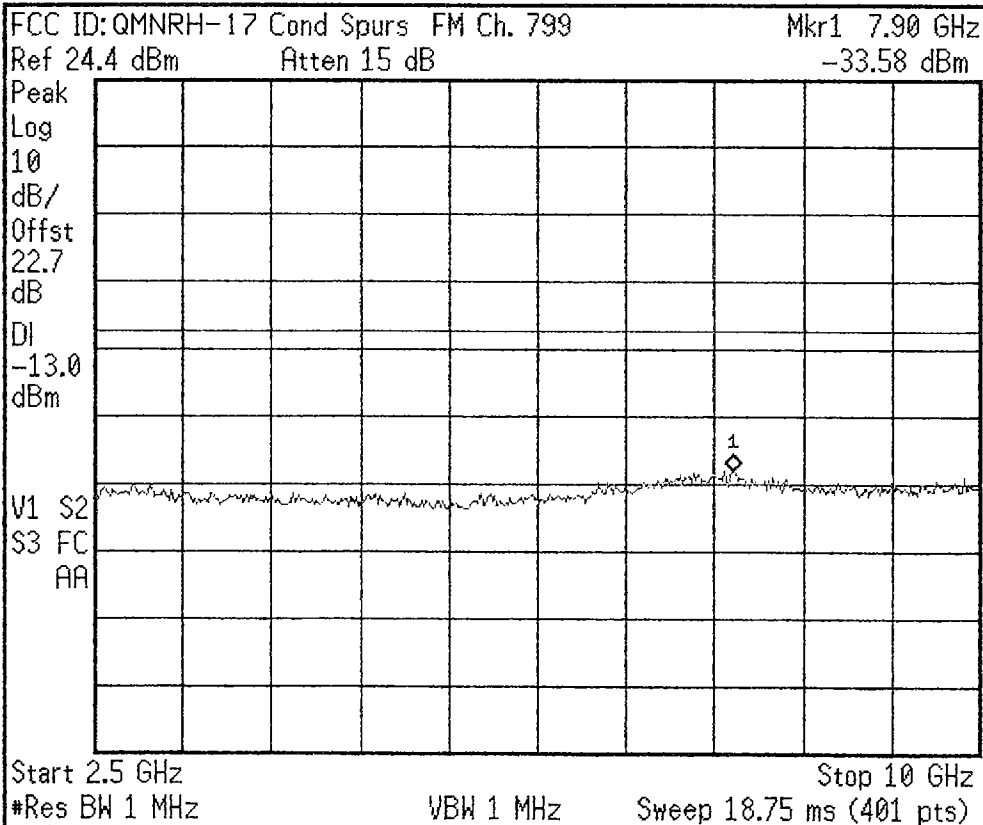
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

✱ Agilent



Freq/Channel

Center Freq
 6.25000000 GHz

Start Freq
 2.50000000 GHz

Stop Freq
 10.0000000 GHz

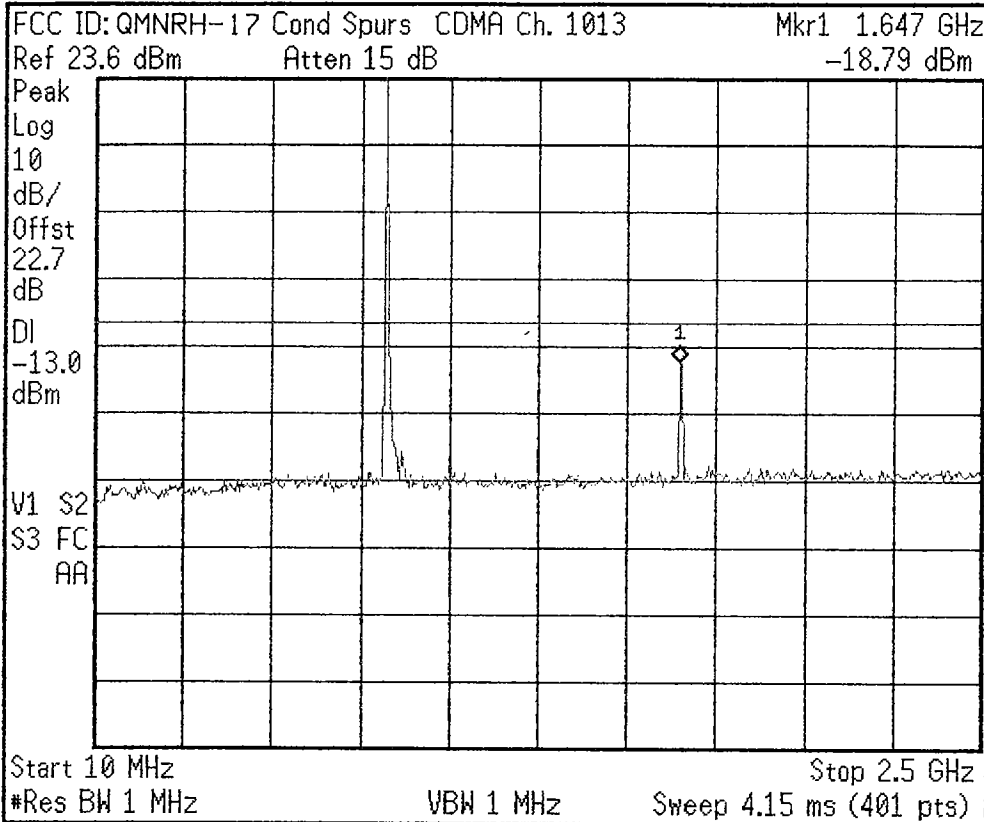
CF Step
 750.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

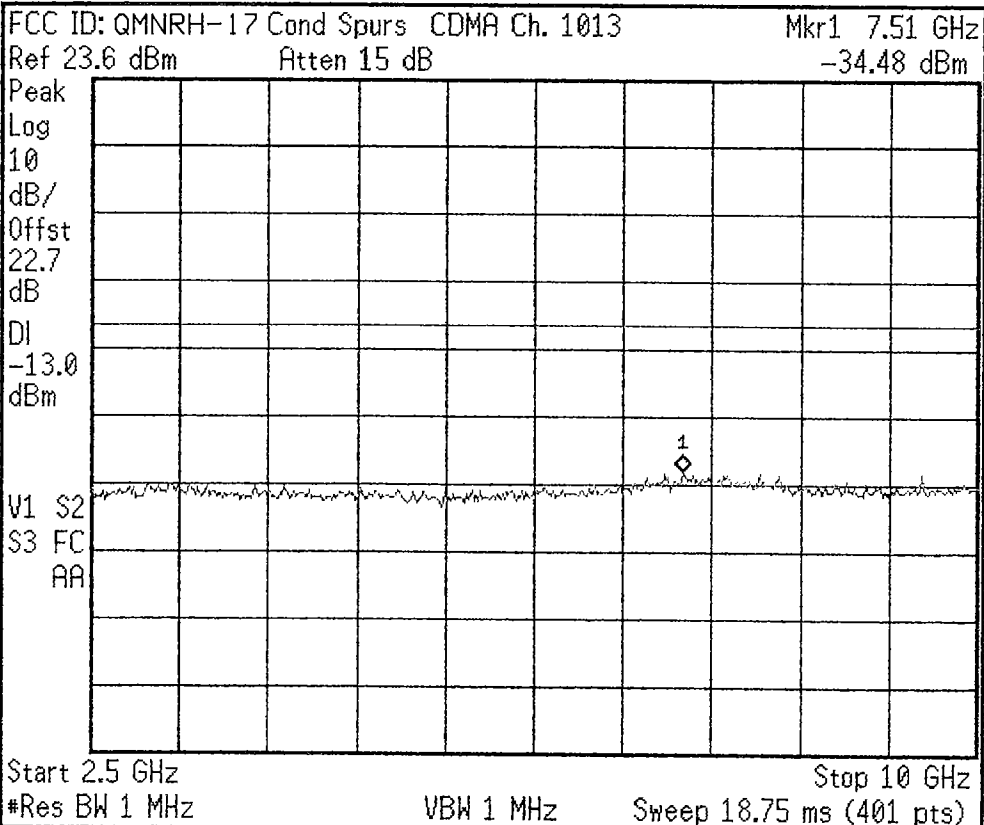
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

Agilent



Freq/Channel

Center Freq
 6.25000000 GHz

Start Freq
 2.50000000 GHz

Stop Freq
 10.0000000 GHz

CF Step
 750.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

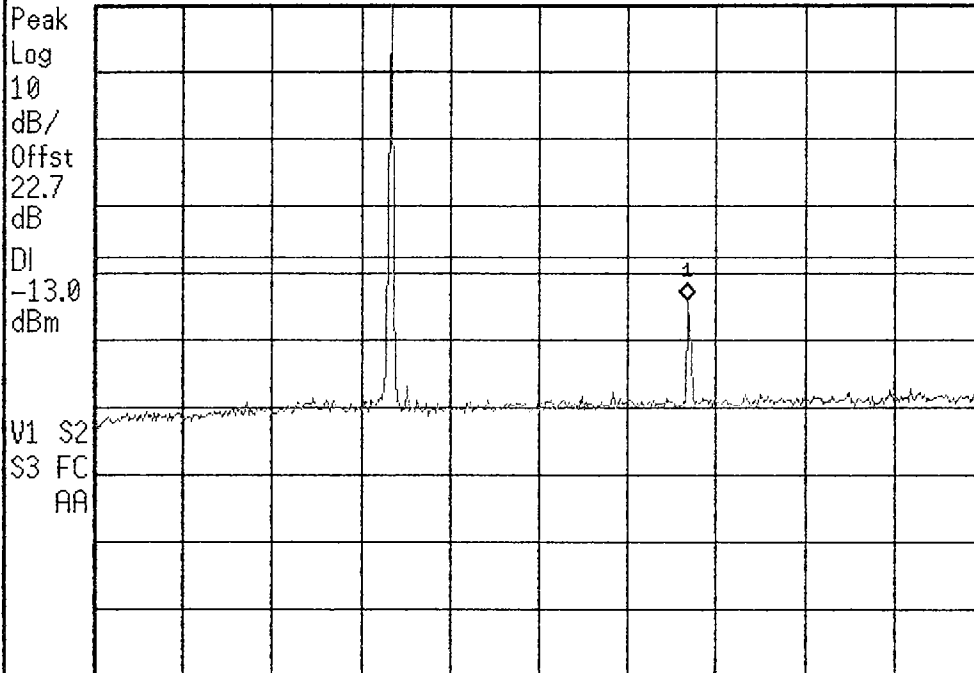
Signal Track
 On Off

Scale Type
 Log Lin

✱ Agilent

FCC ID: QMNRH-17 Cond Spurs CDMA Ch. 383 Mkr1 1.672 GHz

Ref 24.7 dBm Atten 15 dB -19.3 dBm



#Res BW 1 MHz VBW 1 MHz Sweep 4.15 ms (401 pts)

Freq/Channel

Center Freq

1.25500000 GHz

Start Freq

10.0000000 MHz

Stop Freq

2.50000000 GHz

CF Step

249.000000 MHz

Auto Man

Freq Offset

0.00000000 Hz

Signal Track

On Off

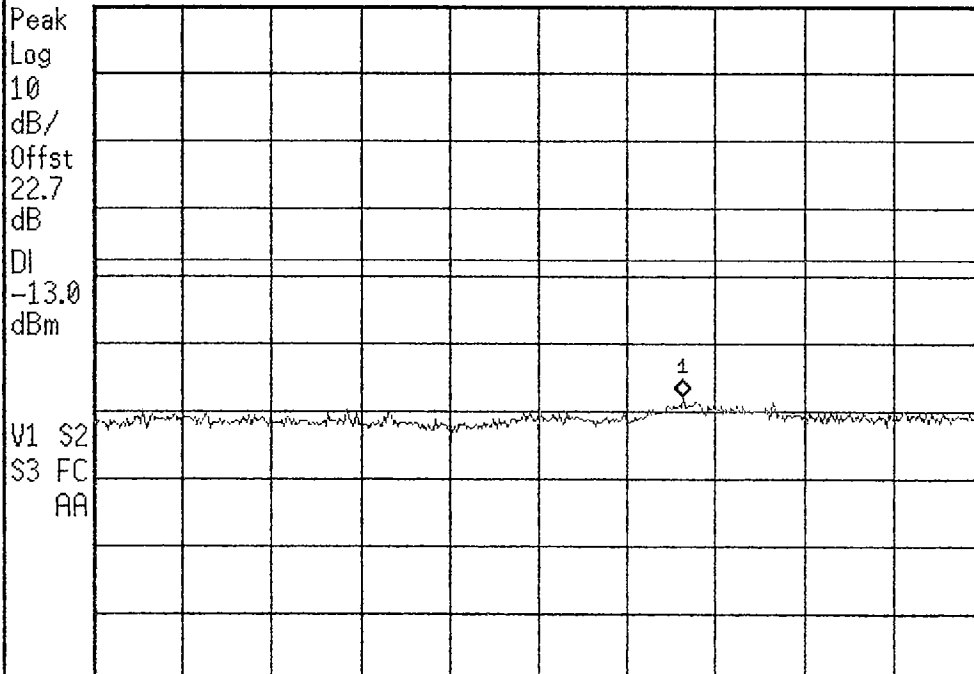
Scale Type

Log Lin

✱ Agilent

FCC ID: QMNRH-17 Cond Spurs CDMA Ch. 383 Mkr1 7.47 GHz

Ref 24.7 dBm Atten 15 dB -33.13 dBm



#Res BW 1 MHz VBW 1 MHz Sweep 18.75 ms (401 pts)

Freq/Channel

Center Freq

6.25000000 GHz

Start Freq

2.50000000 GHz

Stop Freq

10.0000000 GHz

CF Step

750.000000 MHz

Auto Man

Freq Offset

0.00000000 Hz

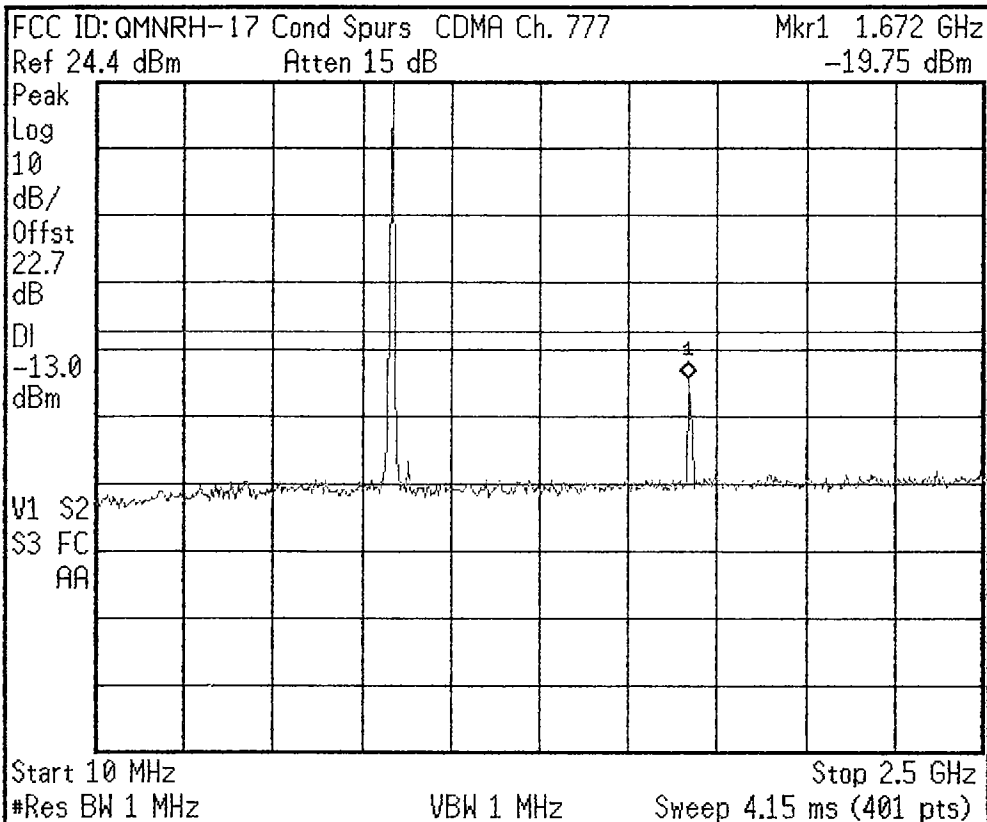
Signal Track

On Off

Scale Type

Log Lin

Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

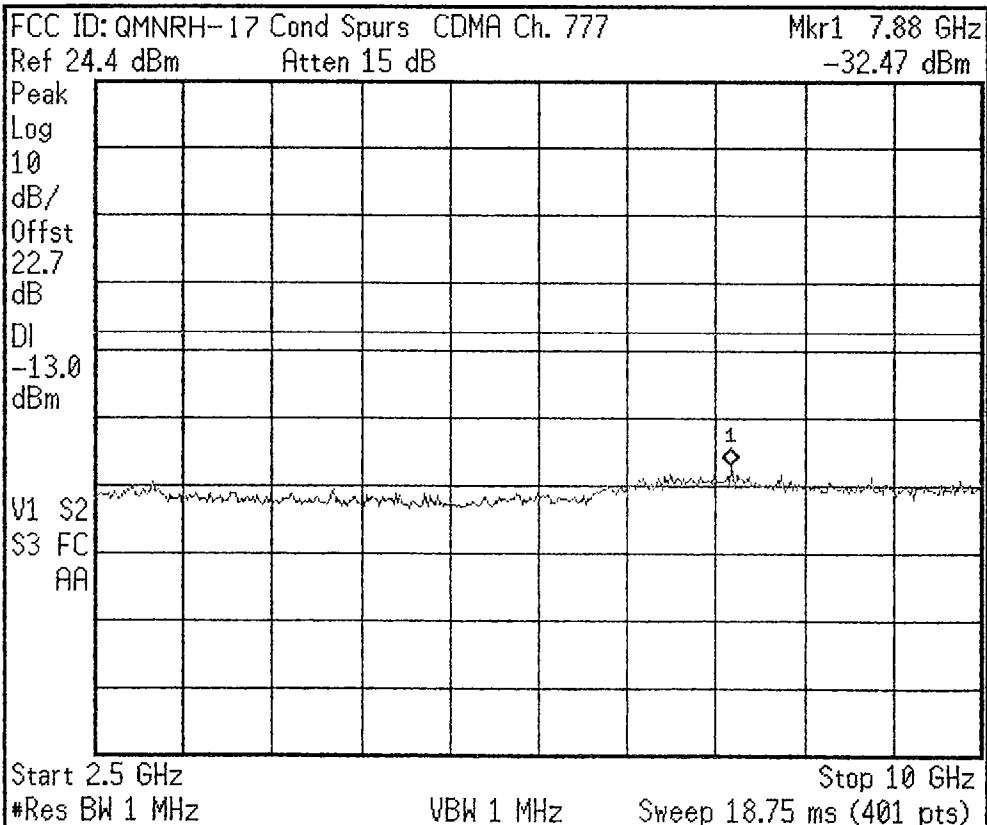
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

Agilent



Freq/Channel

Center Freq
 6.25000000 GHz

Start Freq
 2.50000000 GHz

Stop Freq
 10.0000000 GHz

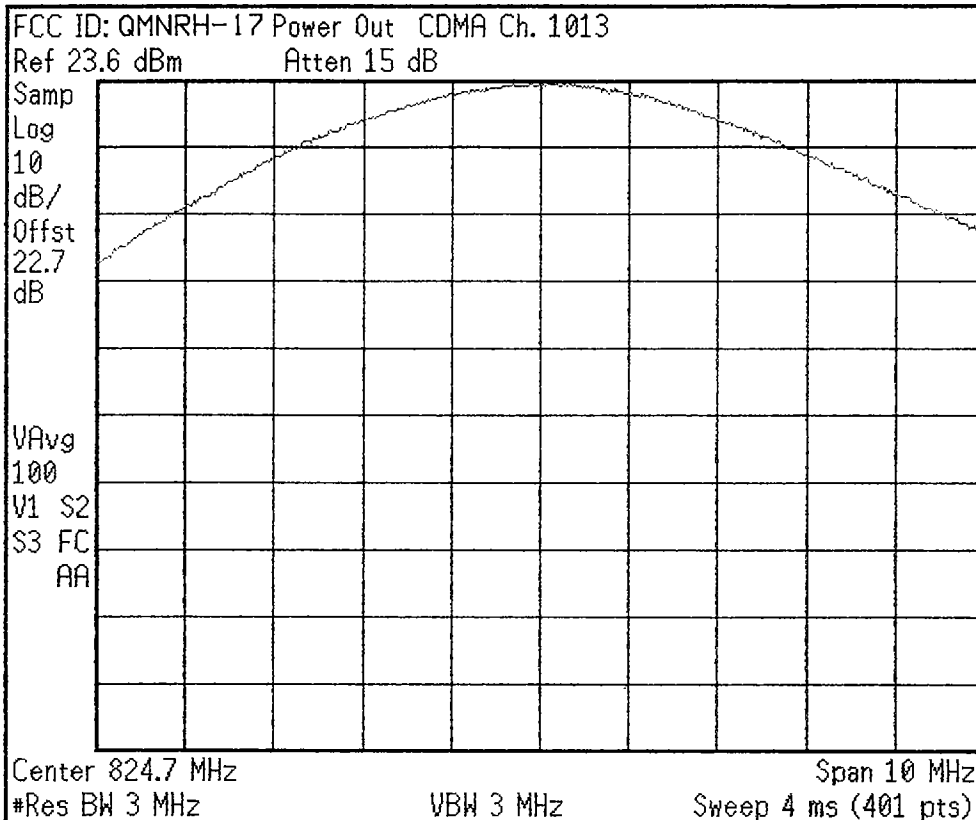
CF Step
 750.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

✱ Agilent



Freq/Channel

Center Freq

824.700000 MHz

Start Freq

819.700000 MHz

Stop Freq

829.700000 MHz

CF Step

1.00000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

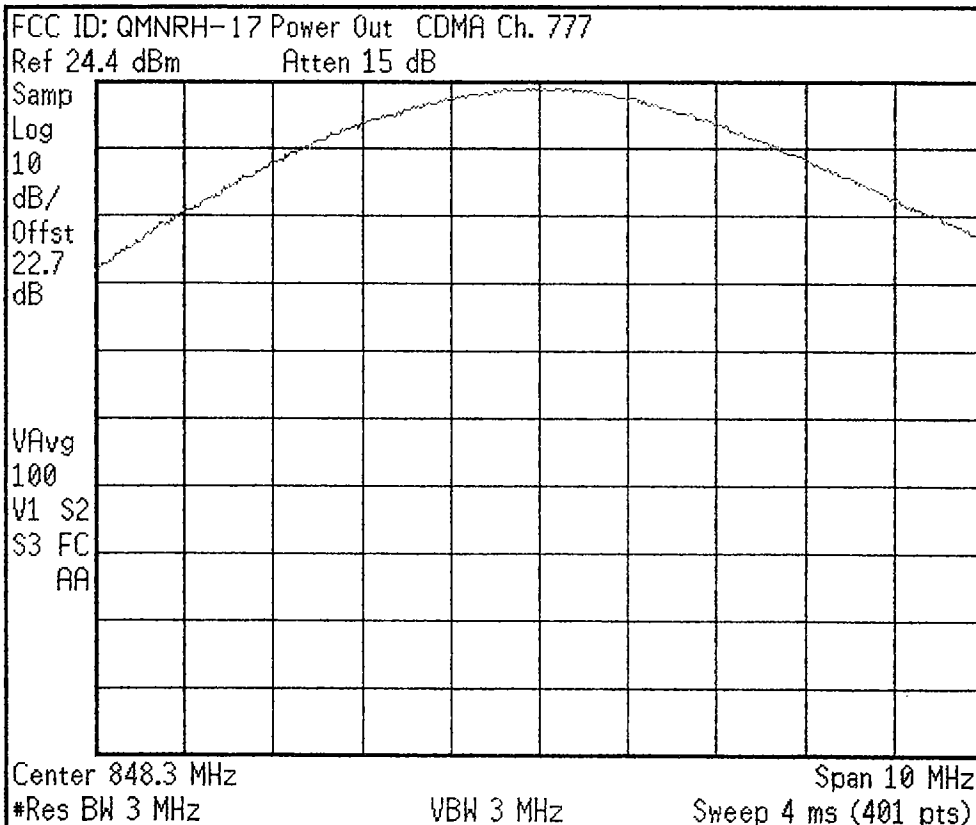
Off

Scale Type

Log

Lin

✱ Agilent



Freq/Channel

Center Freq

848.310000 MHz

Start Freq

843.310000 MHz

Stop Freq

853.310000 MHz

CF Step

1.00000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

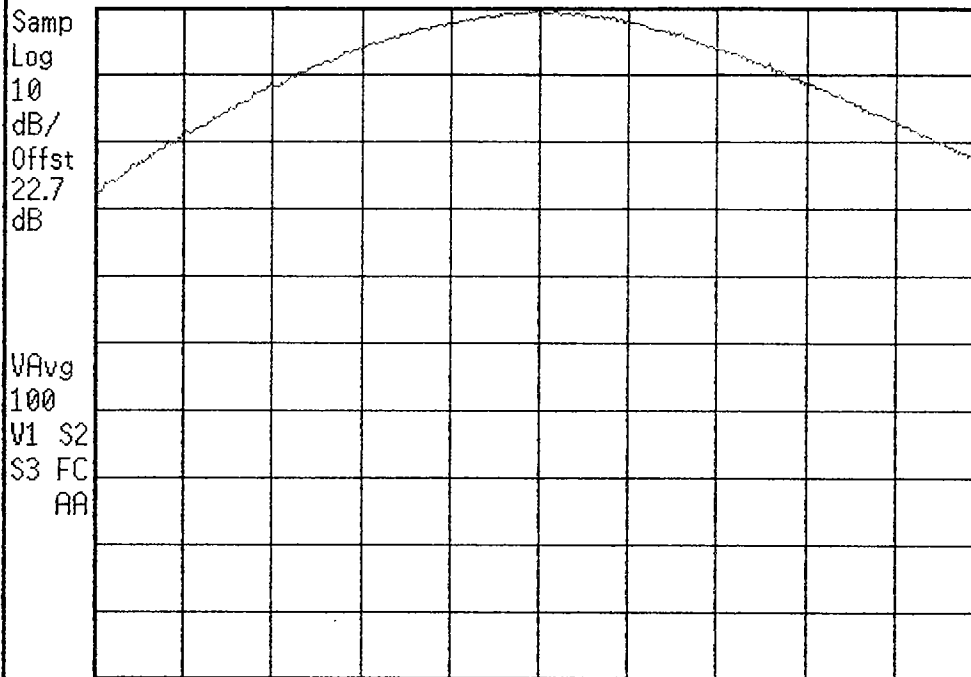
Log

Lin

Agilent

FCC ID: QMNRH-17 Power Out CDMA Ch. 383

Ref 24.7 dBm Atten 15 dB



Center 836.5 MHz

Span 10 MHz

#Res BW 3 MHz

VBW 3 MHz

Sweep 4 ms (401 pts)

Freq/Channel

Center Freq
836.490000 MHz

Start Freq
831.490000 MHz

Stop Freq
841.490000 MHz

CF Step
1.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Scale Type
Log Lin

Agilent

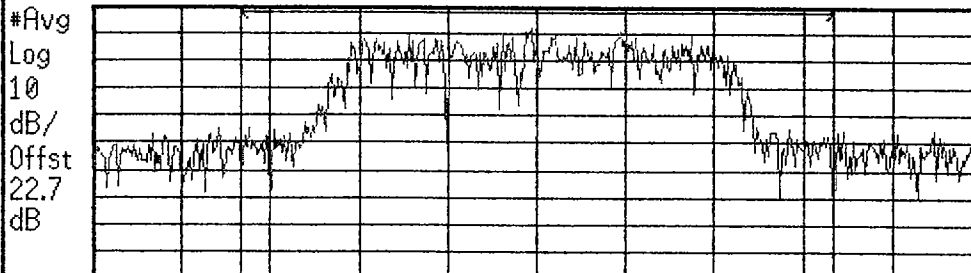
Ch Freq 836.49 MHz

Trig Free

Channel Power

FCC ID: QMNRH-17 Power Out CDMA Ch. 383

Ref 24.7 dBm Atten 15 dB



Center 836.5 MHz

Span 3 MHz

Res BW 30 kHz

VBW 300 kHz

Sweep 8 ms (401 pts)

Freq/Channel

Center Freq
836.490000 MHz

Start Freq
834.990000 MHz

Stop Freq
837.990000 MHz

CF Step
300.000000 kHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Scale Type
Log Lin

Channel Power

24.74 dBm /2.0000 MHz

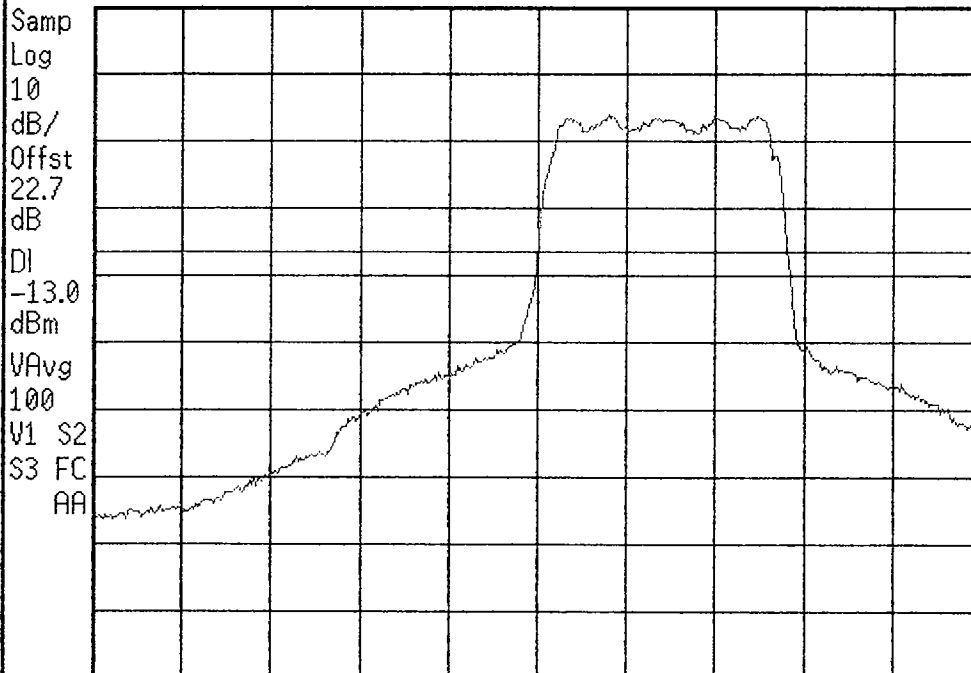
Power Spectral Density

-38.27 dBm/Hz

Agilent

FCC ID: QMNRH-17 Band Edge CDMA Ch. 1013

Ref 23.6 dBm Atten 15 dB



Center 824 MHz

Span 5 MHz

*Res BW 30 kHz

VBW 30 kHz

Sweep 11.32 ms (401 pts)

Freq/Channel

Center Freq

824.000000 MHz

Start Freq

821.500000 MHz

Stop Freq

826.500000 MHz

CF Step

500.000000 kHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

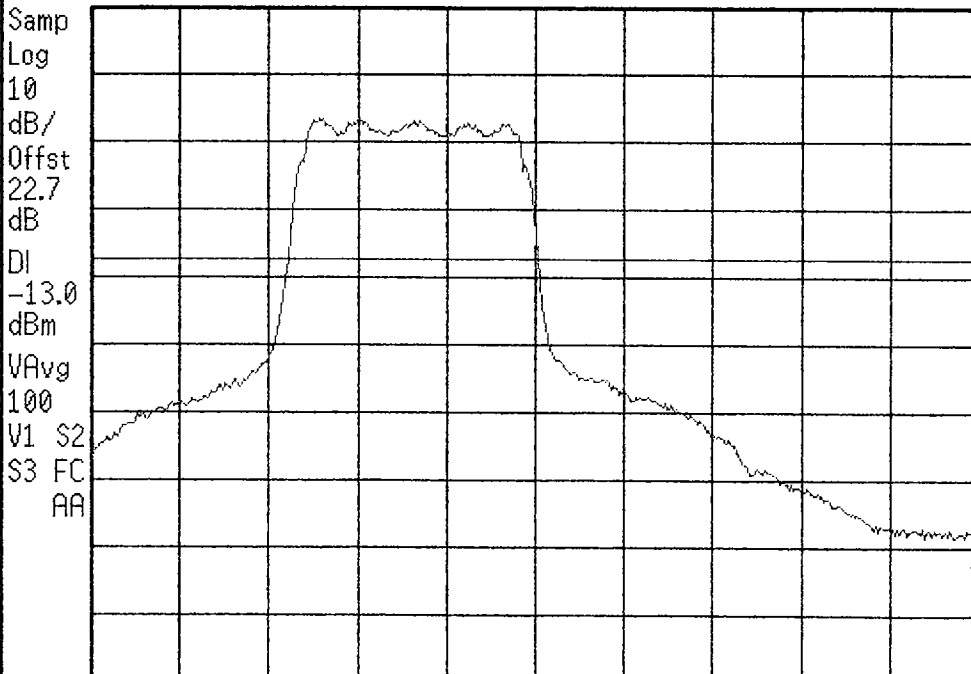
Log

Lin

Agilent

FCC ID: QMNRH-17 Band Edge CDMA Ch. 777

Ref 24.4 dBm Atten 15 dB



Center 849 MHz

Span 5 MHz

*Res BW 30 kHz

VBW 30 kHz

Sweep 11.32 ms (401 pts)

Freq/Channel

Center Freq

849.000000 MHz

Start Freq

846.500000 MHz

Stop Freq

851.500000 MHz

CF Step

500.000000 kHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

Lin

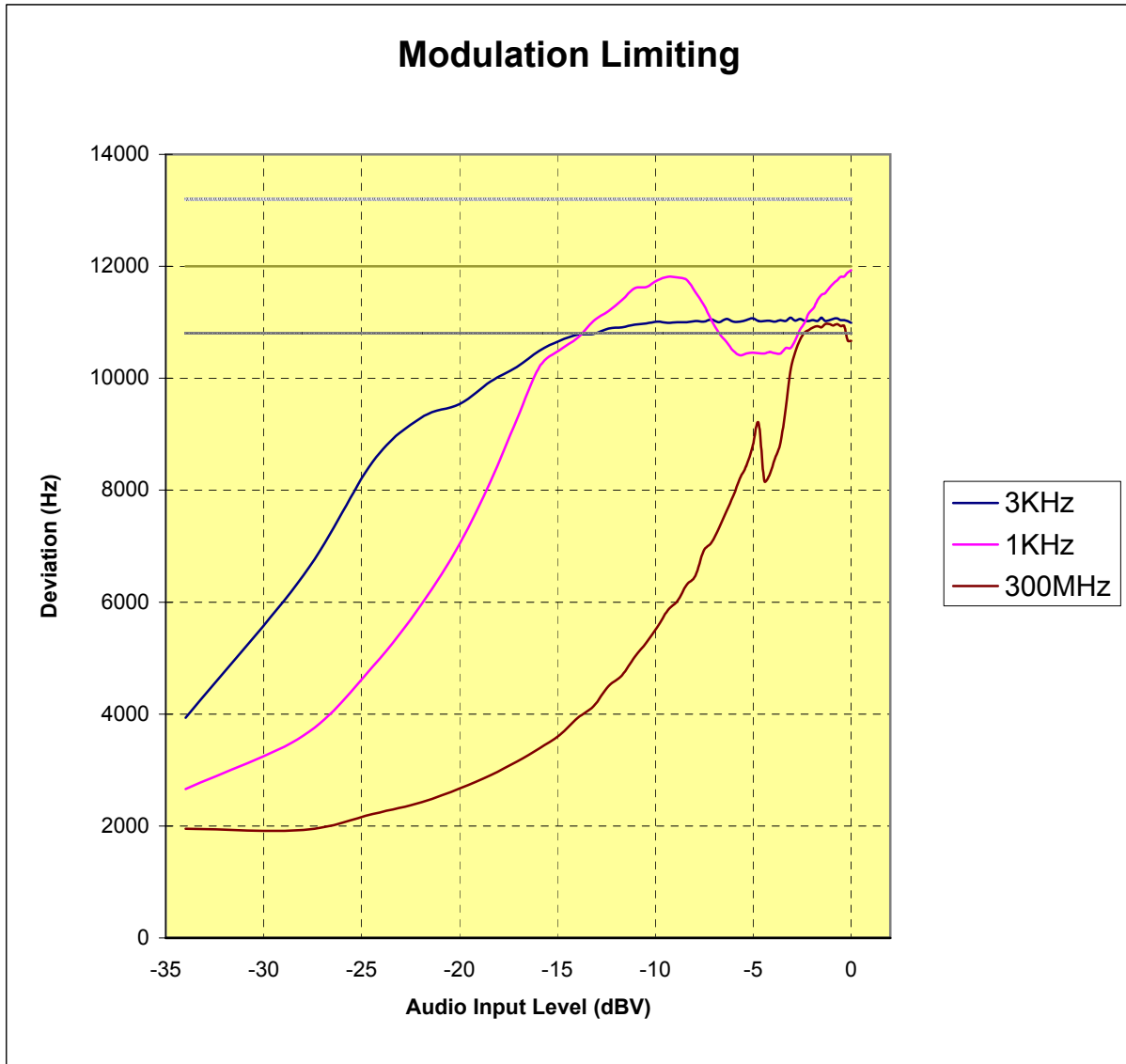
PCTEST Engineering Lab., Inc.

SUBJECT: Modulation Characteristics
FCC Part 22

Test Report No.: 22.221121631.QMN
Test Date: 11.21.2002

EUT: NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
Model: 2280
FCC ID: QMNRH-17

REFERENCE: 1 kHz = 0 dB



NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
FCC ID: QMNRH-17

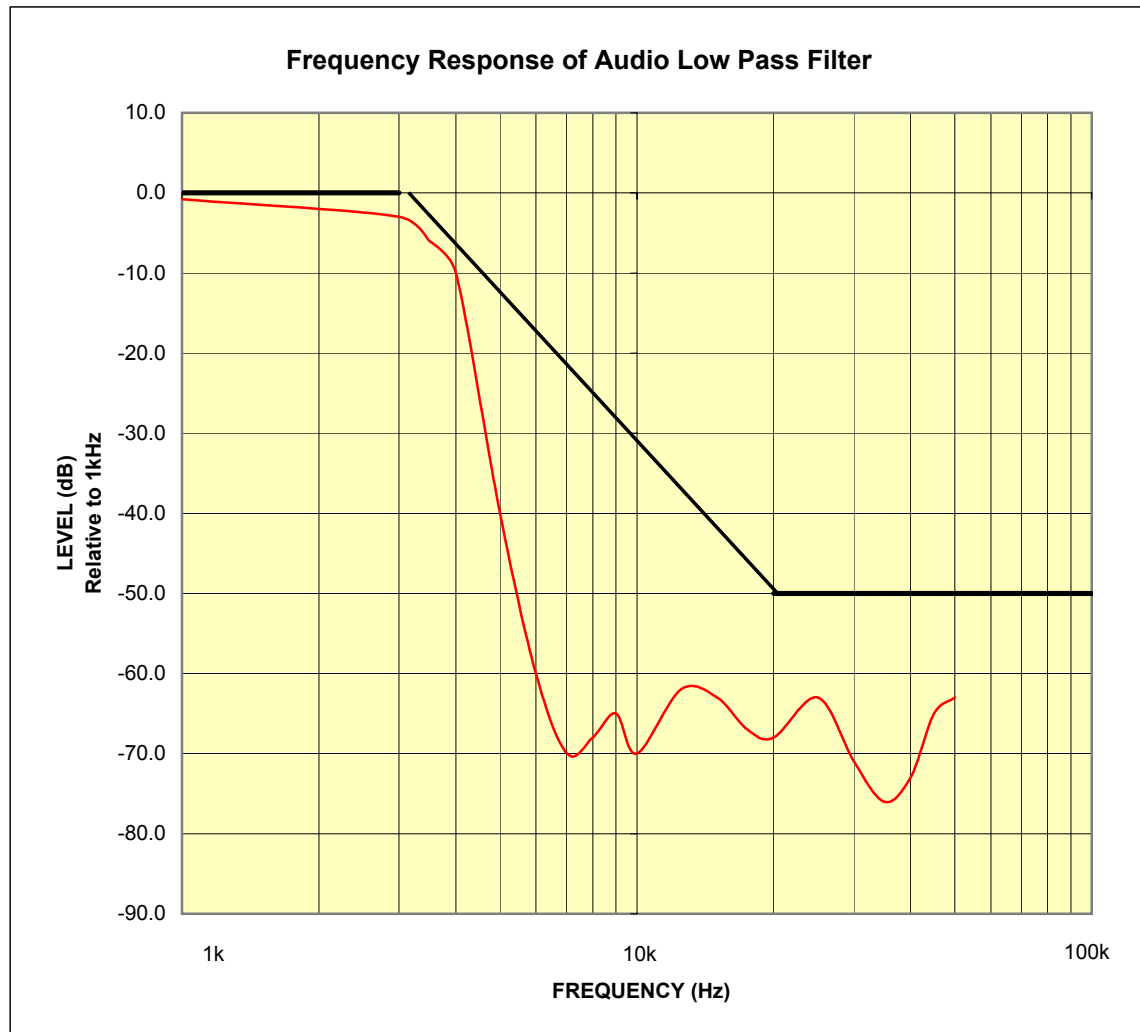
PCTEST Engineering Lab., Inc.

SUBJECT: Modulation Characteristics
FCC Part 22

Test Report No.: 22.221121631.QMN
Test Date: 11.21.2002

EUT: NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
Model: 2280
FCC ID: QMNRH-17

REFERENCE: 1 kHz = 0 dB



NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
FCC ID: QMNRH-17

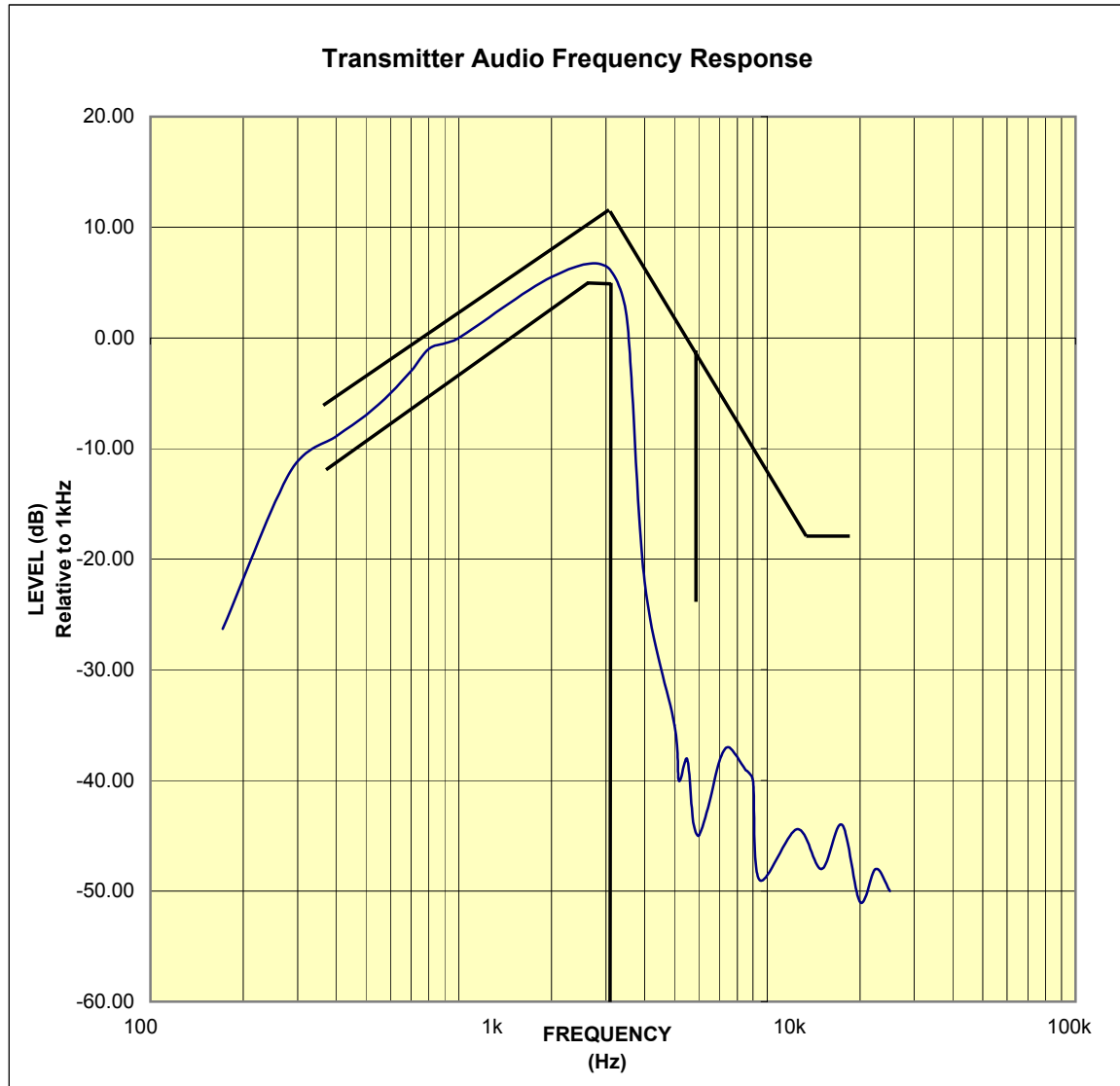
PCTEST Engineering Lab., Inc.

SUBJECT: Modulation Characteristics
FCC Part 22

Test Report No.: 22.221121631.QMN
Test Date: 11.21.2002

EUT: NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
Model: 2280
FCC ID: QMNRH-17

REFERENCE: 1 kHz = 0 dB



NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
FCC ID: QMNRH-17